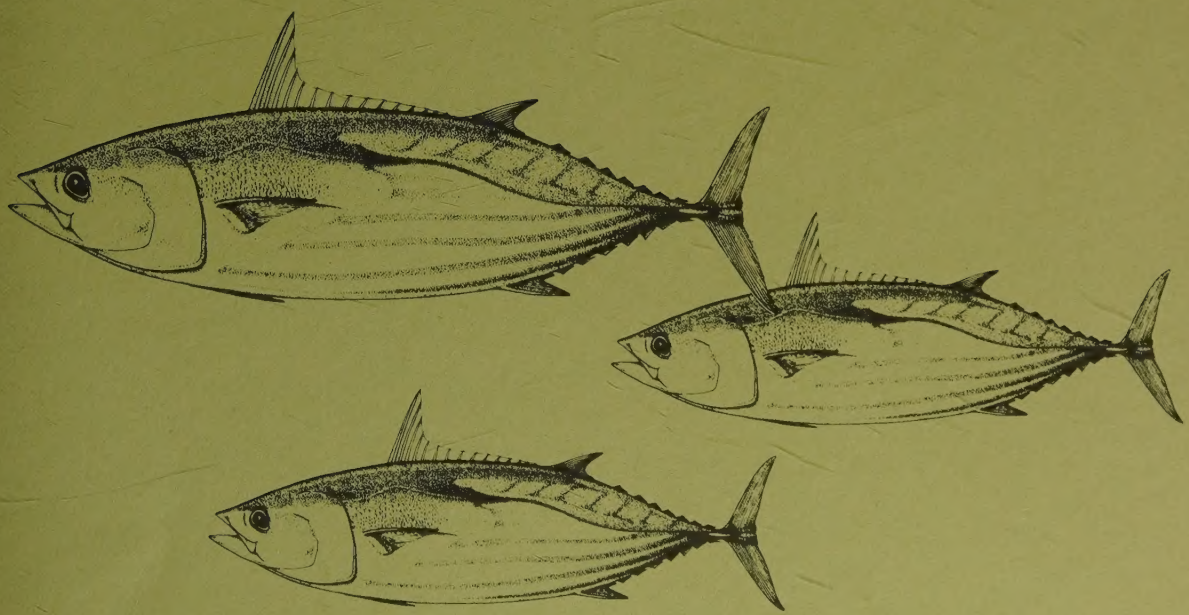
OCTOBER 1980
No. 10

FISHING INFORMATION

Southwest Fisheries Center-La Jolla, California



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FISHING INFORMATION

OCTOBER 1980, No. 10

EDITOR: JAMES A. RENNER

I. Barrett, Director, SOUTHWEST FISHERIES CENTER
J. Carr, Deputy Director

PREFACE

This publication, Fishing Information, appears monthly and contains 1) fishery advisory information, 2) a narrative description of pertinent surface temperature conditions, 3) charts of winds and pressures for the eastern North Pacific, 4) charts of sea surface temperature for the North Pacific and eastern tropical Pacific, and 5) charts of subsurface temperature structure in the eastern North Pacific.

A supplement to Fishing Information appears at 15-day intervals throughout the year. It contains a chart of sea surface temperature (contoured at $2^{o}F$ ($1^{o}C$) intervals) from Baja California to Vancouver Island out to about $135^{o}W$. Special bulletins are published in conjunction with the 15-day sea surface temperature charts which include short-term projections of albacore distribution and locations of productive fishing areas, information on oceanographic and atmospheric conditions, and other information as is appropriate during the albacore fishing season.

NOTICE TO SUBSCRIBERS

Publication of FISHING INFORMATION and its 15-day supplements by the National Marine Fisheries Service will cease with the December 1980 issue. Beginning with the January 1981 issue, responsibility for the preparation of the types of charts currently published in Fishing Information will be transferred to the National Weather Service and the National Environmental Satellite Service. Scientists of the Fishing Information staff are currently working with National Weather Service and National Environmental Satellite Service personnel to ensure that the follow-on publication to Fishing Information meets user needs and that a smooth transition takes place.

We here at the National Marine Fisheries Service wish to thank you for your continued interest in, and support for, FISHING INFORMATION and urge you to lend similar support to the new National Weather Service/National Environmental Satellite Service publication.

To cancel delivery of this publication in the event you no longer need to receive it, or to change the delivery address if you are moving but still need to receive it, please notify us by writing: Editor, Fishing Information, National Marine Fisheries Service, Southwest Fisheries Center, P. O. Box 271, La Jolla, California 92038.

Submitted for publication - December 12, 1980

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ENVIRONMENTAL CHARTS ANALYZED BY:

F. Miller (Figures 8 and 9)
F. Miller (Figures 1, 2, 3, 4, 5, 6, 7, and 15-day Supplement)

TECHNICAL EDITOR:

R. Allen

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R. Allen, H. Orr

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  H. Ewen at Cape St. James Light
  R. W. Moe at Kains Island Light
  M. V. Stewart at Amphitrite Point Light

Scripps Institution of Oceanography, La Jolla, California

Sea Surface Temperature and Environmental Conditions

Forrest R. Miller

Eastern North Pacific

During October, sea surface temperatures (SST) normally decrease 1° to 3°C overmost of the north Pacific. The cooling rate is greatest in areas with heavy cloud cover and ocean mixing caused by strong surface winds. The strongest surface winds are usually associated with low pressure cells and weather fronts that move across the north Pacific between the Aleutian low and the eastern Pacific high pressure systems. The Aleutian low is normally located near 57°W, 150°W and the eastern Pacific high center near 33°N, 138°W (Figure 1).

During October 1980 the Aleutian low system moved eastward and intensified rapidly. The center was located near 55°N, 160°W and central pressures were 5 to 7 millibars below normal. The high pressure center in the eastern Pacific was located on an average, near its usual position at 35°N, 137°W, with central pressures 1 to 2 millibars above normal (Figure 2). Whereas the high pressure system dominated the surface circulation and weather patterns during most of the summer of 1980, the Aleutian low pressure became the most pronounced feature across the north Pacific in October. As a result, surface winds and ocean mixing increased, and intense weather systems moved frequently across the north Pacific along the southern periphery of the Aleutian low. Most of the storm centers followed the strong wind belt between 40°N and 45°N across the central Pacific, then moved northeastward across the Gulf of Alaska into British Columbia.

The SST pattern west of 140°W from 40°N to 45°N (Figure 3) reflected a significantly stronger ocean front than a month ago. In addition, SST's north of 35°N decreased 3° to 4°C during October. These changes in SST's took place where surface winds and subsequent ocean mixing were strongest along the southern boundary of the Aleutian low center (Figure 2). The result was greater than normal cooling of the ocean surface, especially where SST's dropped more than 2°C below normal (Figure 5). SST's were below normal over most of the eastern Pacific north of 25°N. The only areas with significant positive SST anomalies, continuing from September 1980, were found west of Baja California and at the head of the Gulf of Alaska. In contrast SST's during October 1979 were above normal over most areas east of 140°W and south of 30°N. Figure 7 reveals that SST's were 1° to 2°C colder in October 1980 than in October 1979 over most of the eastern Pacific from 25°N to 45°N. Off the U.S. west coast, SST's were markedly colder this October than during October 1979 and 1978. In the central north Pacific, SST's were 1° to 2°C below normal in October 1980 over an area similar in location and extent to the negative anomaly pattern one year ago (Figure 5).

Albacore fishing during October 1980 improved slightly over September off central California. Although fishing weather conditions deteriorated slowly this month, temperature edges (ocean fronts) remained strong along the coast of Oregon and central California.

Western North Pacific

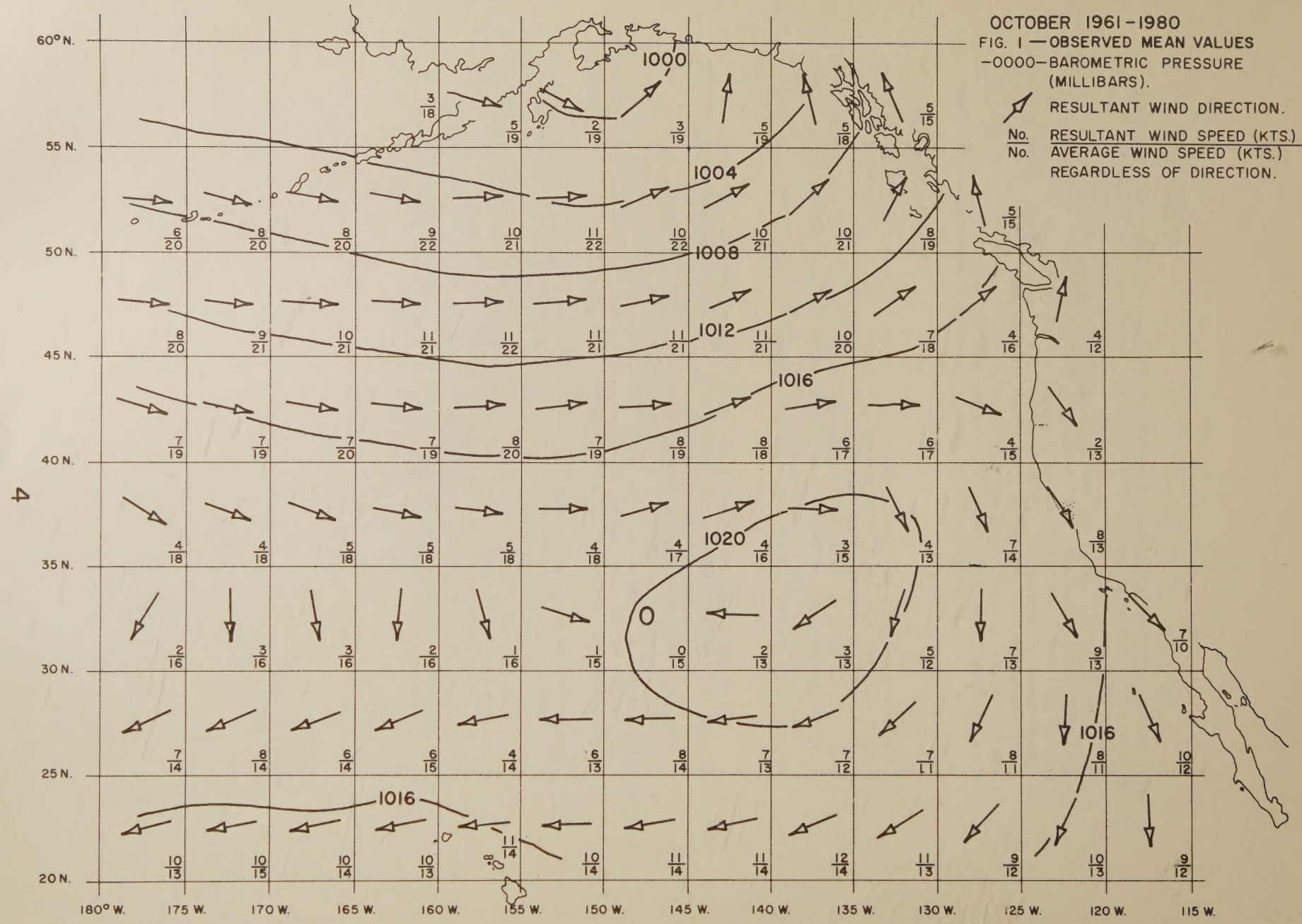
During October 1980, the western Pacific high pressure ridge strengthened along 30°N and the westward extention of the Aleutian low pressure system intensified north of 40°N, resulting in very strong westerly winds east of Japan from 40°N to 50°N. Because of increased wind mixing of the ocean surface layer, the north Pacific Ocean front was stronger from 40°N to 45°N in October 1980 than in September 1980 (Figure 4). In the north Pacific, the extent of negative SST anomalies more than 1°C increased markedly during October (Figure 6). South of 30°N, SST's remained above normal over most of the tropics and west of 140°E, due, primarily, to light winds and relatively low cloud cover in the high pressure system. Tropical storms and early winter weather fronts moved eastward between 140°E and 160°E and caused SST's to cool faster than normal, especially south of 35°N (Figure 6).

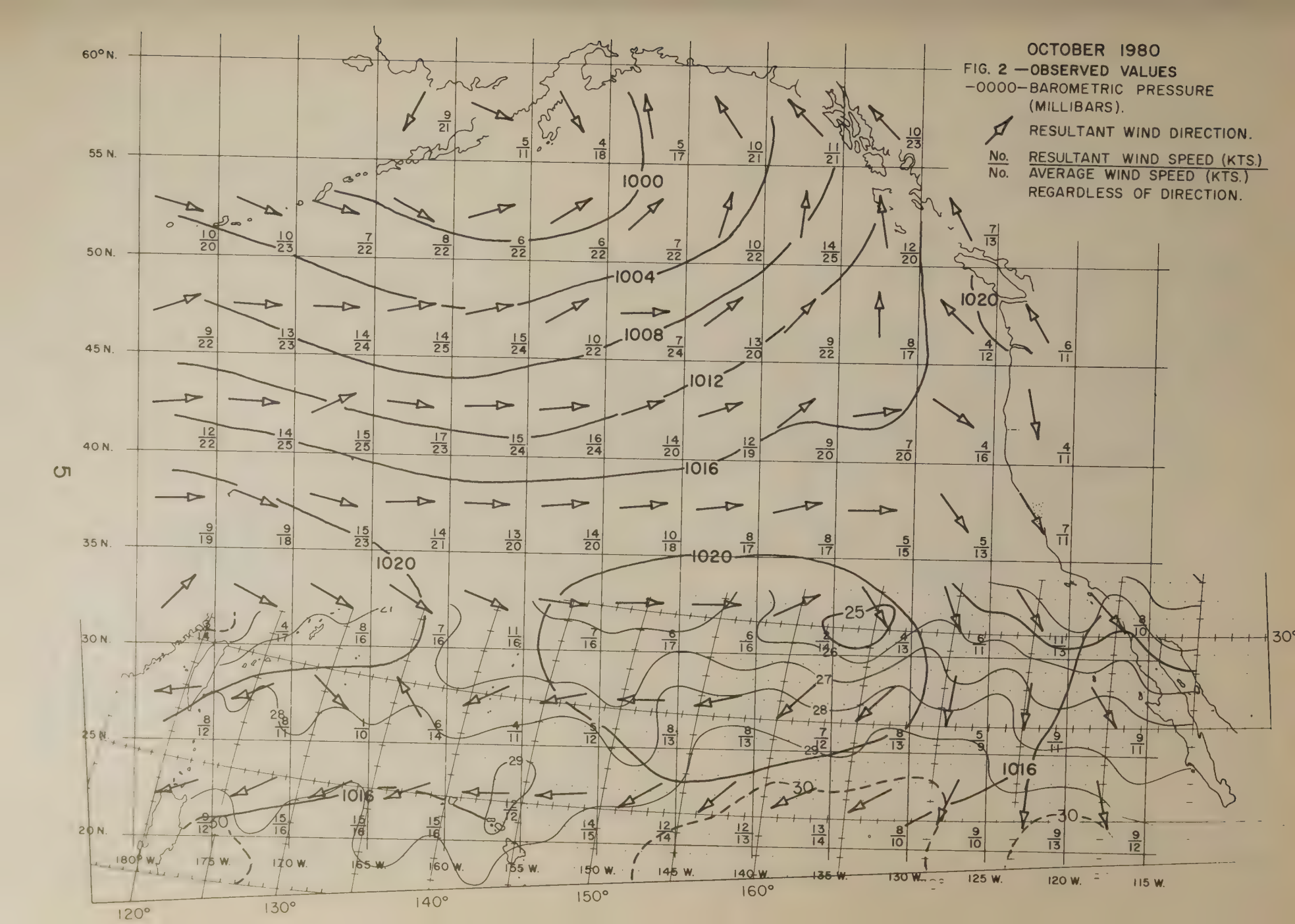
Eastern Tropical Pacific

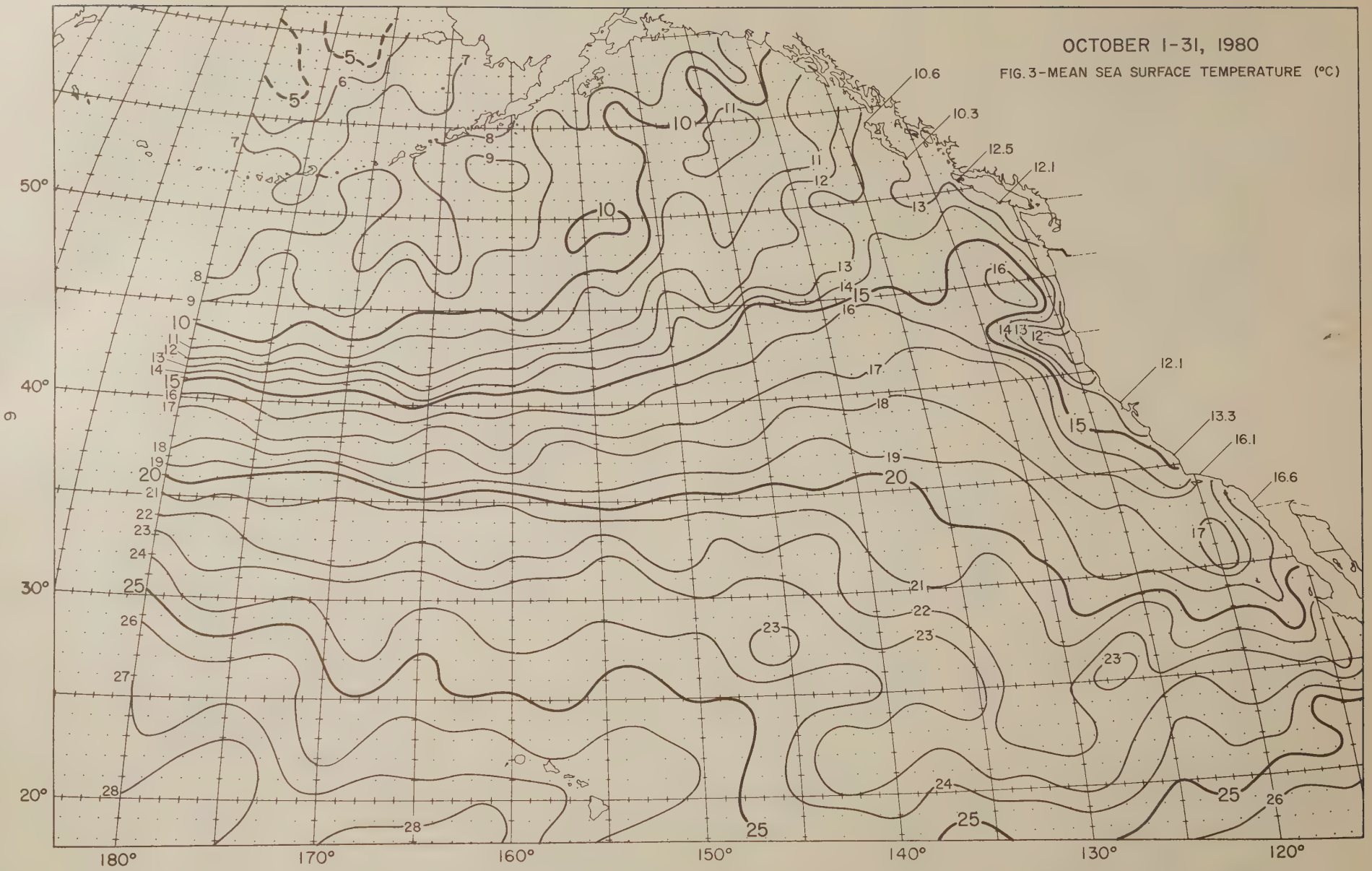
In October SST's normally decrease less than 1°C in the northern hemisphere. Along the equator and in the southern hemisphere to 20°S, SST's normally increase less than 1°C. At the surface of the Peru Current north of 30°S and along the equator east of 150°W, the annual SST minimums are usually reached. This occurs after several months of active ocean upwelling and wind mixing, combined with seasonal cooling. The equatorial ocean front is usually most intense at or slightly north of the equator between the Galapagos Islands and the coast of Ecuador.

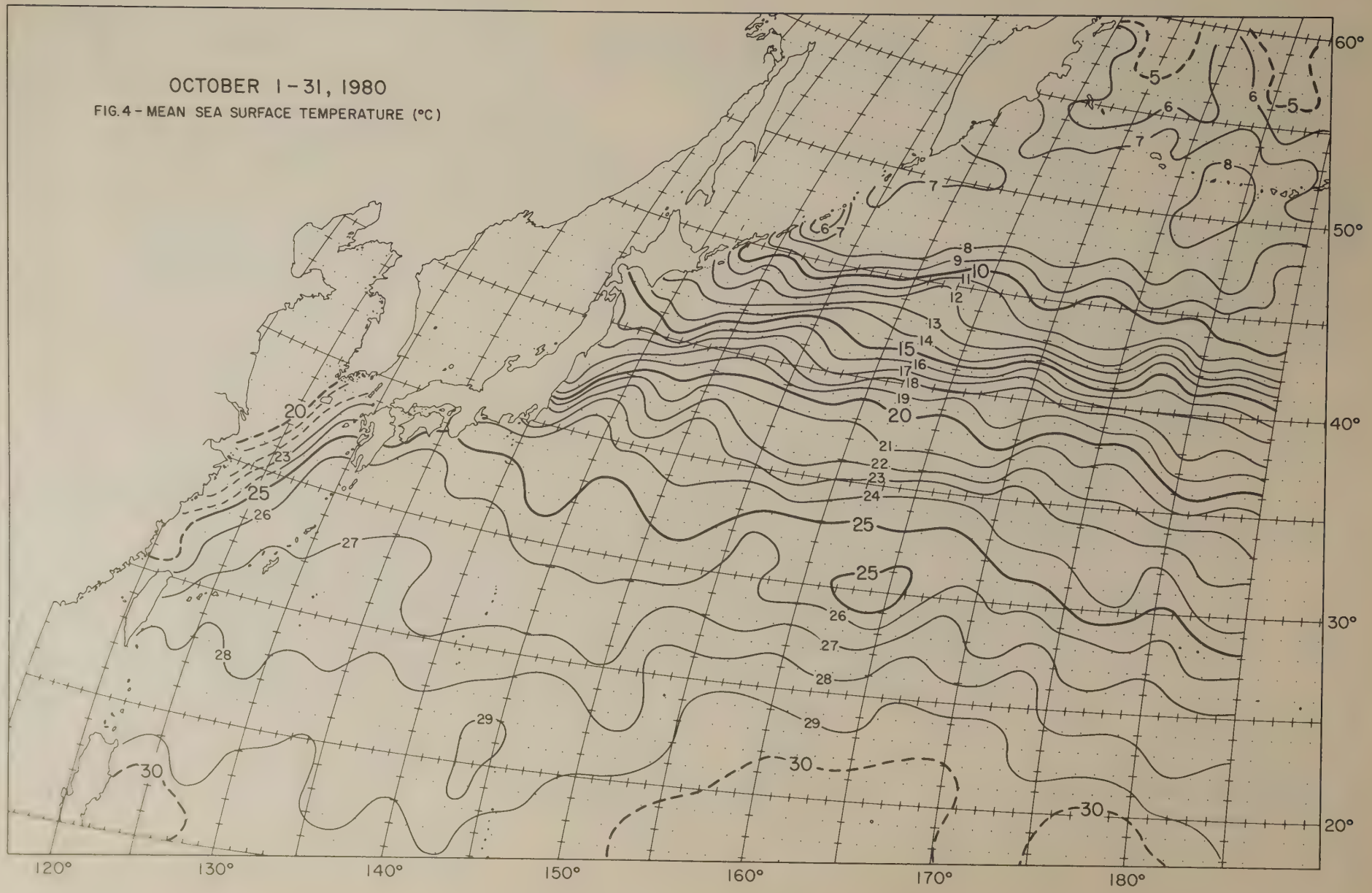
During October 1980, SST's were above normal over tropical areas in the northern hemisphere where surface temperatures were greater than 28°C (Figure 8). Several areas experienced higher SST's because of light winds and relatively clear skies southwest of Mexico, where SST anomalies were more than 1°C above normal (Figure 9). SST's were more than 1°C below normal west of Baja California due to the cooler California Current and increased wind mixing. SST's were also more than 1° to 2°C below normal south of the Gulf of Tehuantepec (95°W) and west of Nicaragua due to increased easterly winds several hundred miles off the coast.

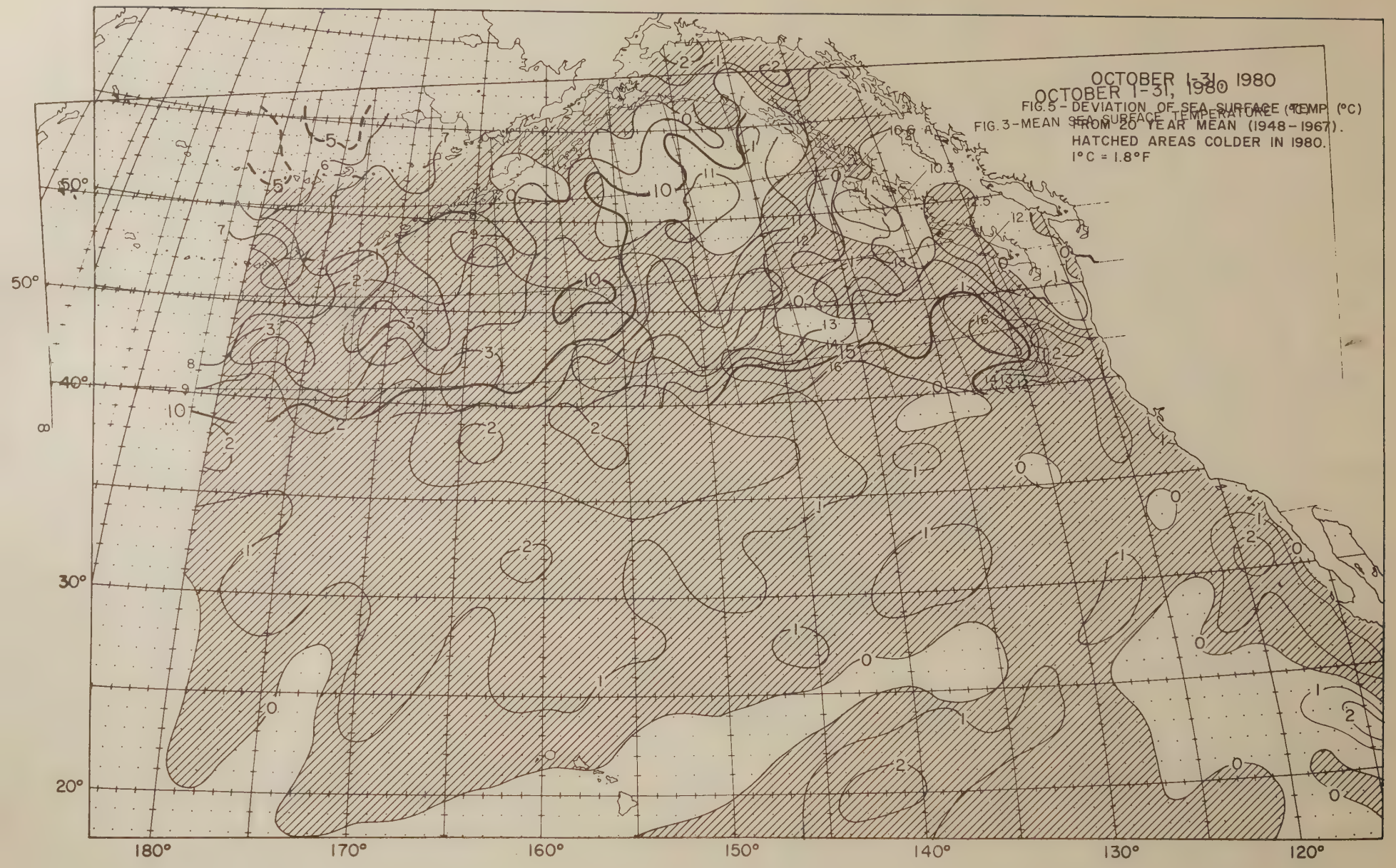
In the equatorial zone from 5°N to 5°S, east of 150°W, SST's were more than 1°C below normal in several areas (Figure 9). SST's were also below normal along the coast of Peru to 15°S and off the coast of Ecuador. Around the Galapagos Islands and southward between 85°W and 110°W, SST's were as much as 1°C above normal. This situation has prevailed for several months, due, in part, to the southern hemisphere high pressure wind circulation which has weakened and periodically shifts northwestward. Surface wind mixing has been sporadic except along the coast of Peru and along the equator. However, west of 110°W, the easterly trade winds have apparently been stronger and helped to maintain lower than normal SST's in the equatorial zone.

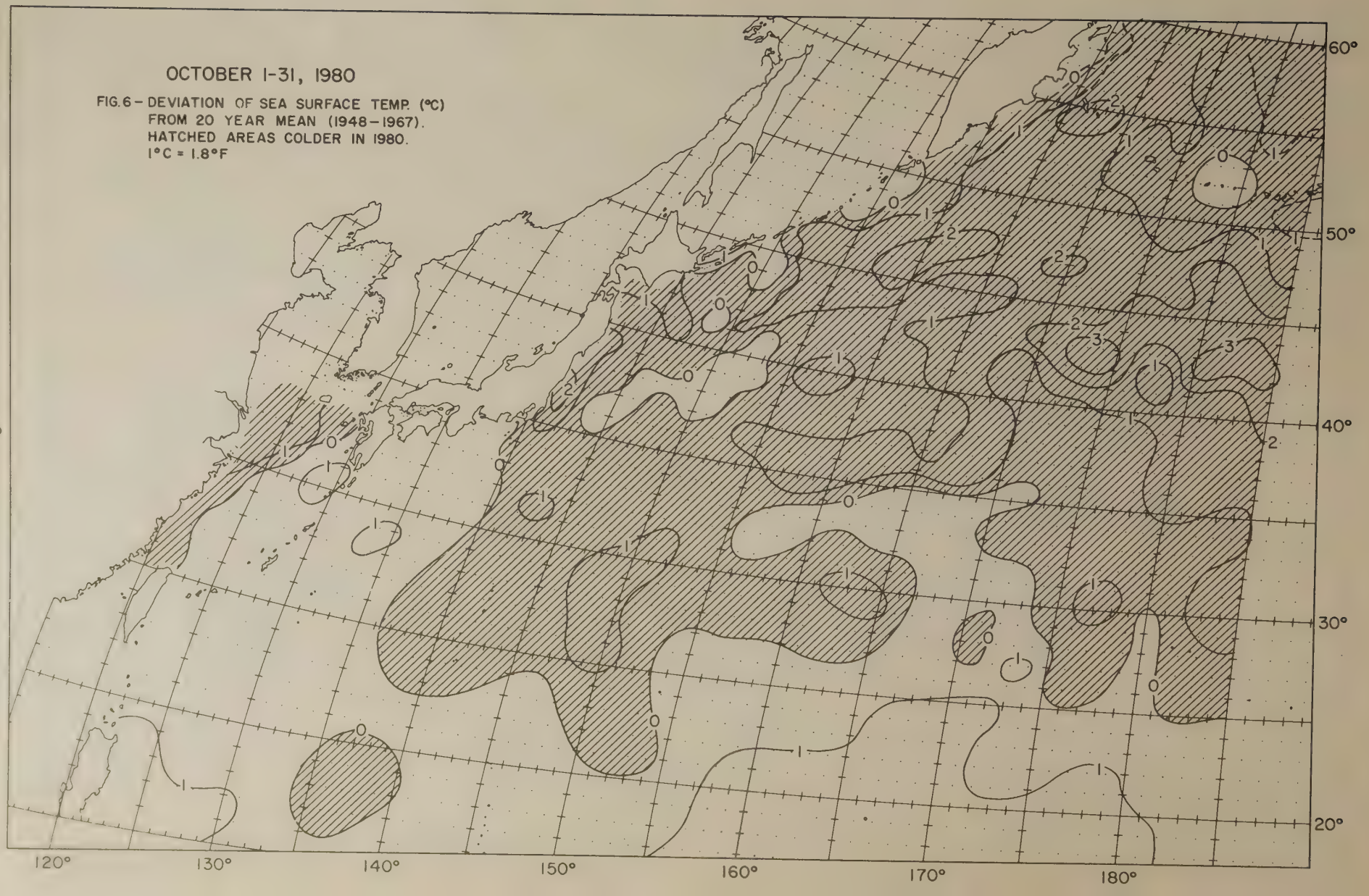

OCTOBER 1961-1980
FIG. 1 — OBSERVED MEAN VALUES
-0000- BAROMETRIC PRESSURE (MILLIBARS).
RESULTANT WIND DIRECTION.
No. RESULTANT WIND SPEED (KTS.)
No. AVERAGE WIND SPEED (KTS.) REGARDLESS OF DIRECTION.
1000
1004
1008
1012
1016
1020
0
1016
1016
60° N.
55 N.
50 N.
45 N.
40 N.
35 N.
30 N.
25 N.
20 N.
180° W.
175 W.
170 W.
165 W.
160 W.
155 W.
150 W.
145 W.
140 W.
135 W.
130 W.
125 W.
120 W.
115 W.

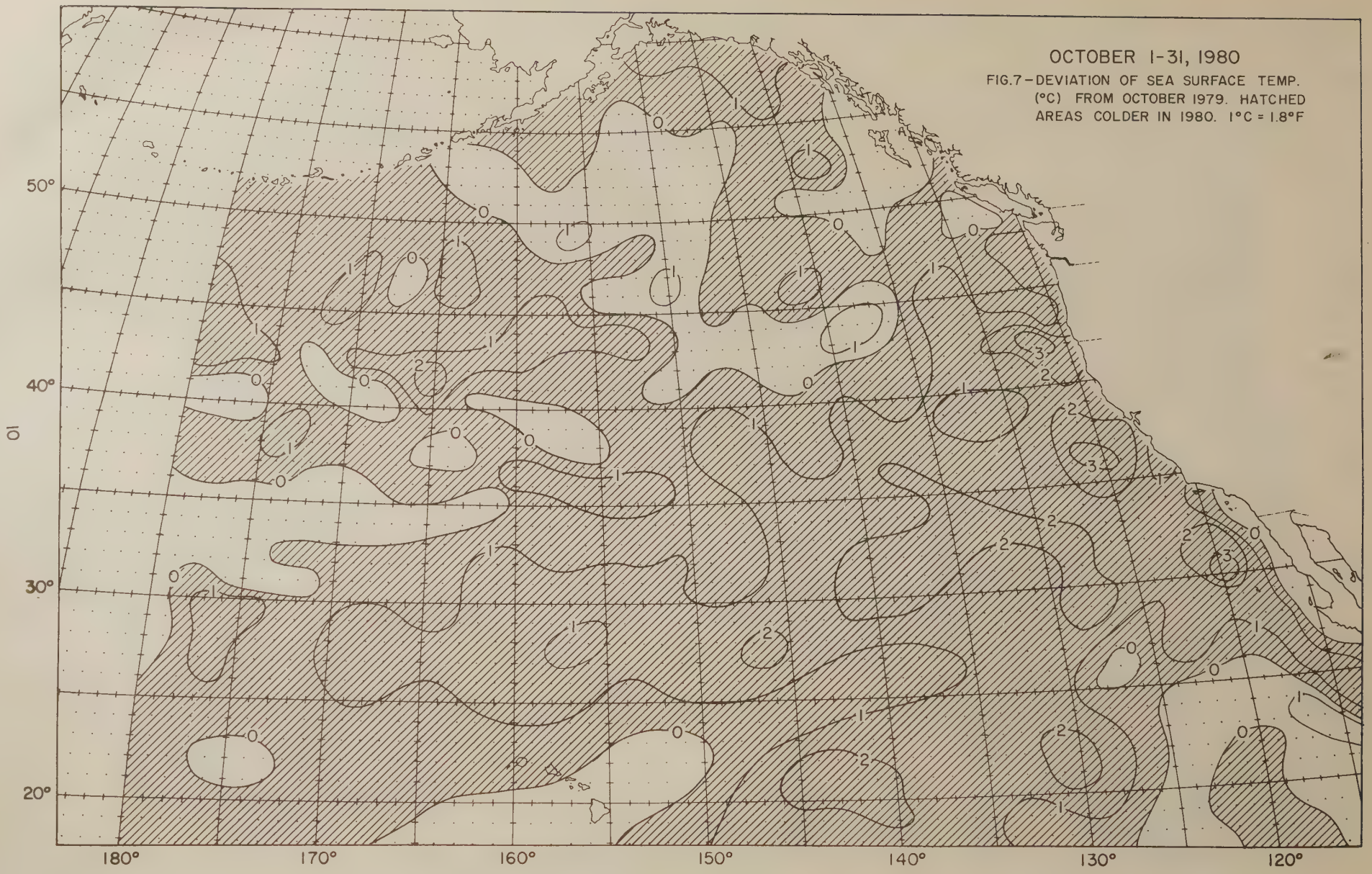

OCTOBER 1980
FIG. 2 —OBSERVED VALUES
-0000-BAROMETRIC PRESSURE (MILLIBARS).
RESULTANT WIND DIRECTION.
No. RESULTANT WIND SPEED (KTS.)
No. AVERAGE WIND SPEED (KTS.) REGARDLESS OF DIRECTION.
60°N.
55 N.
50N.
45 N.
40 N.
35 N.
30 N.
25 N.
20 N.
1000
1004
1008
1012
1016
1020
180° W.
175 W.
170 W.
165 W.
160 W.
155 W.
150 W.
145 W.
140 W.
135 W.
130 W.
125 W.
120 W.
115 W.
120°
130°
140°
150°
160°

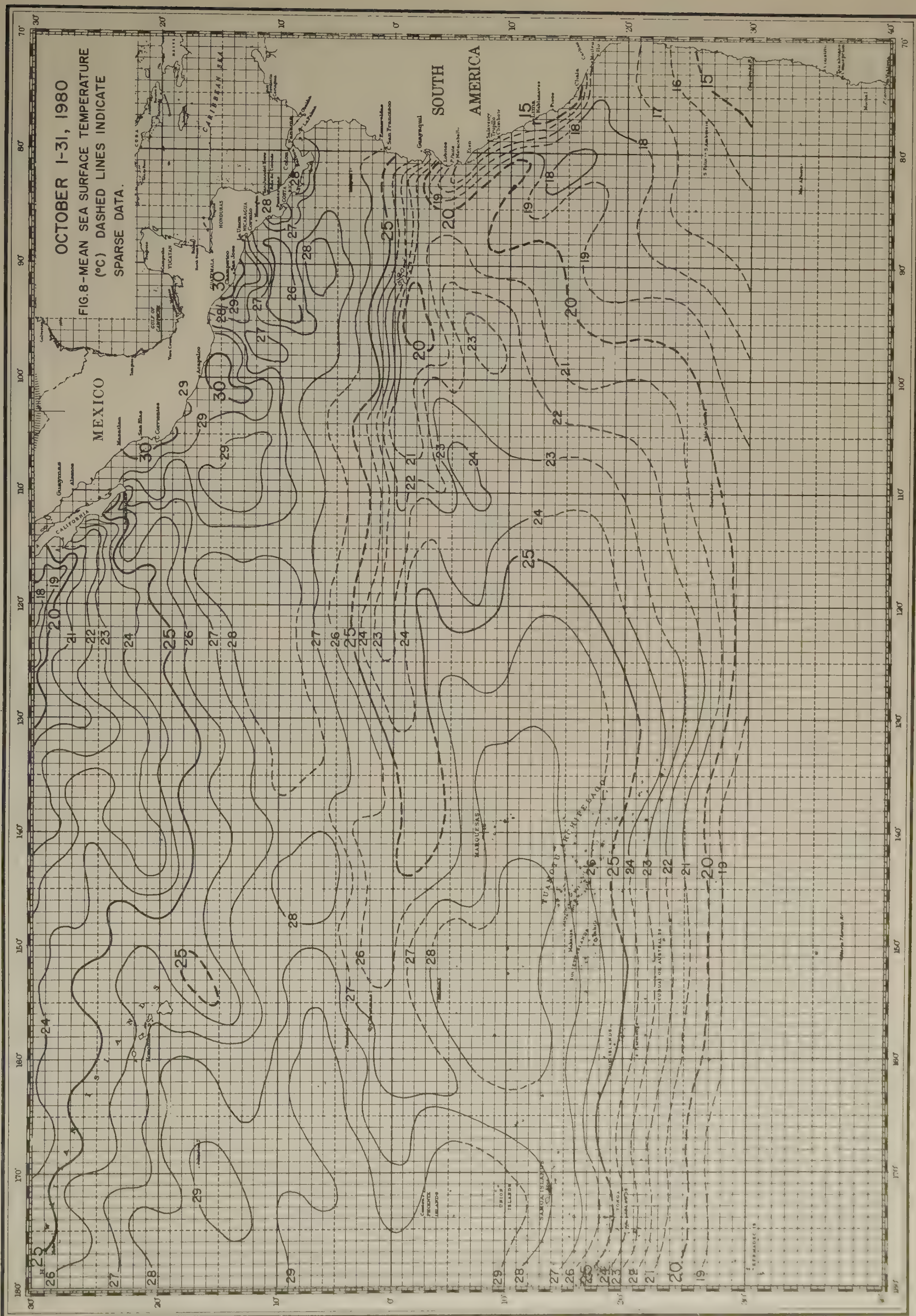

OCTOBER 1-31, 1980
FIG. 3-MEAN SEA SURFACE TEMPERATURE (°C)
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°


OCTOBER 1-31, 1980
FIG. 4 - MEAN SEA SURFACE TEMPERATURE (°C)
60°
50°
40°
30°
20°
120°
130°
140°
150°
160°
170°
180°

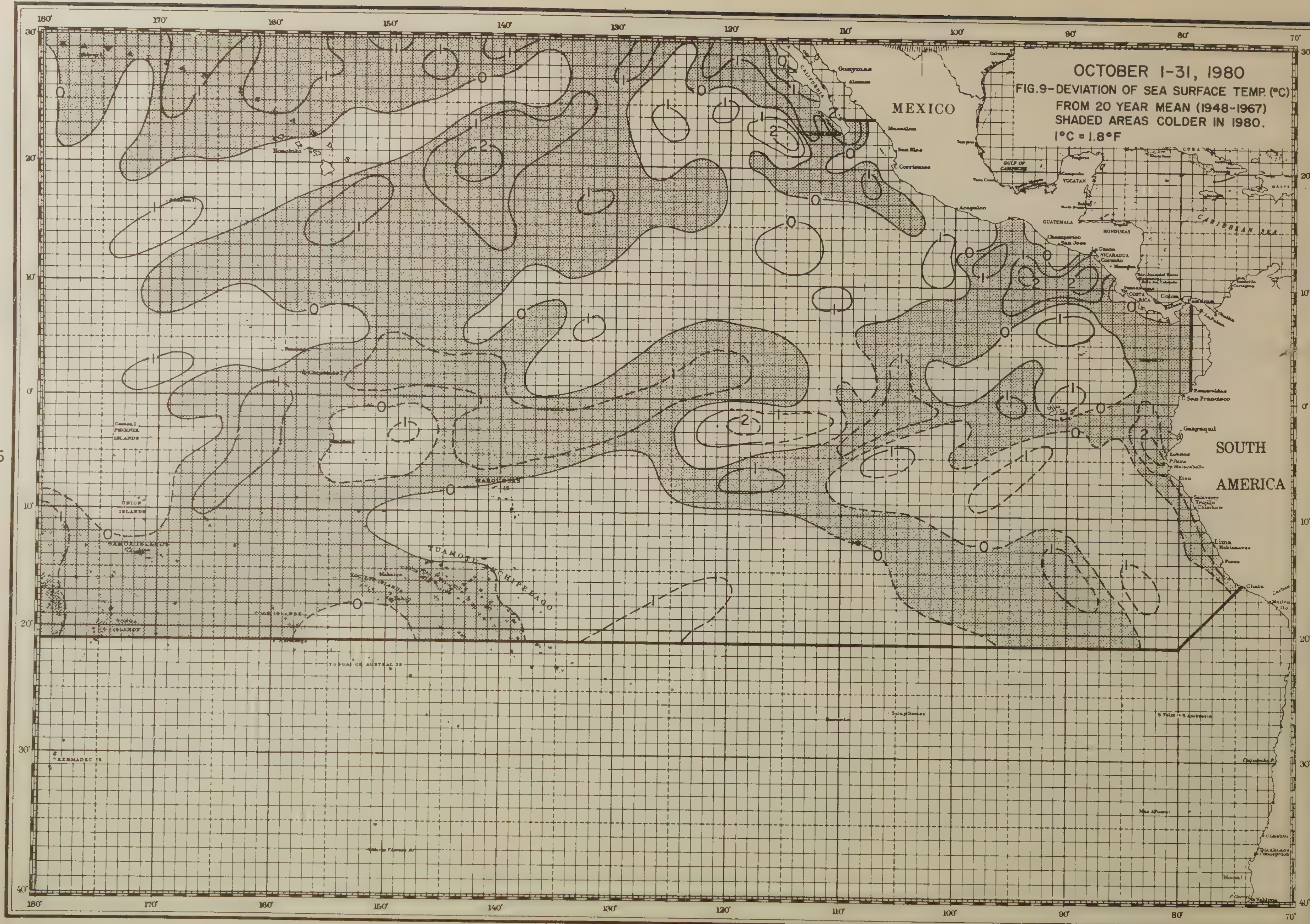

OCTOBER 1-31, 1980
OCTOBER 1-31, 1980
FIG.5 - DEVIATION OF SEA SURFACE TEMP (°C)
FROM 20 YEAR MEAN (1948-1967).
HATCHED AREAS COLDER IN 1980.
1°C = 1.8°F
FIG.3 - MEAN SEA SURFACE TEMPERATURE (°C)
60°
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°


OCTOBER 1-31, 1980
FIG. 6 – DEVIATION OF SEA SURFACE TEMP. (°C) FROM 20 YEAR MEAN (1948–1967). HATCHED AREAS COLDER IN 1980. 1°C = 1.8°F
60°
50°
40°
30°
20°
120°
130°
140°
150°
160°
170°
180°


OCTOBER 1-31, 1980
FIG.7-DEVIATION OF SEA SURFACE TEMP. (°C) FROM OCTOBER 1979. HATCHED AREAS COLDER IN 1980. 1°C = 1.8°F
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°



OCTOBER 1-31, 1980
FIG. 8-MEAN SEA SURFACE TEMPERATURE (°C) DASHED LINES INDICATE SPARSE DATA.

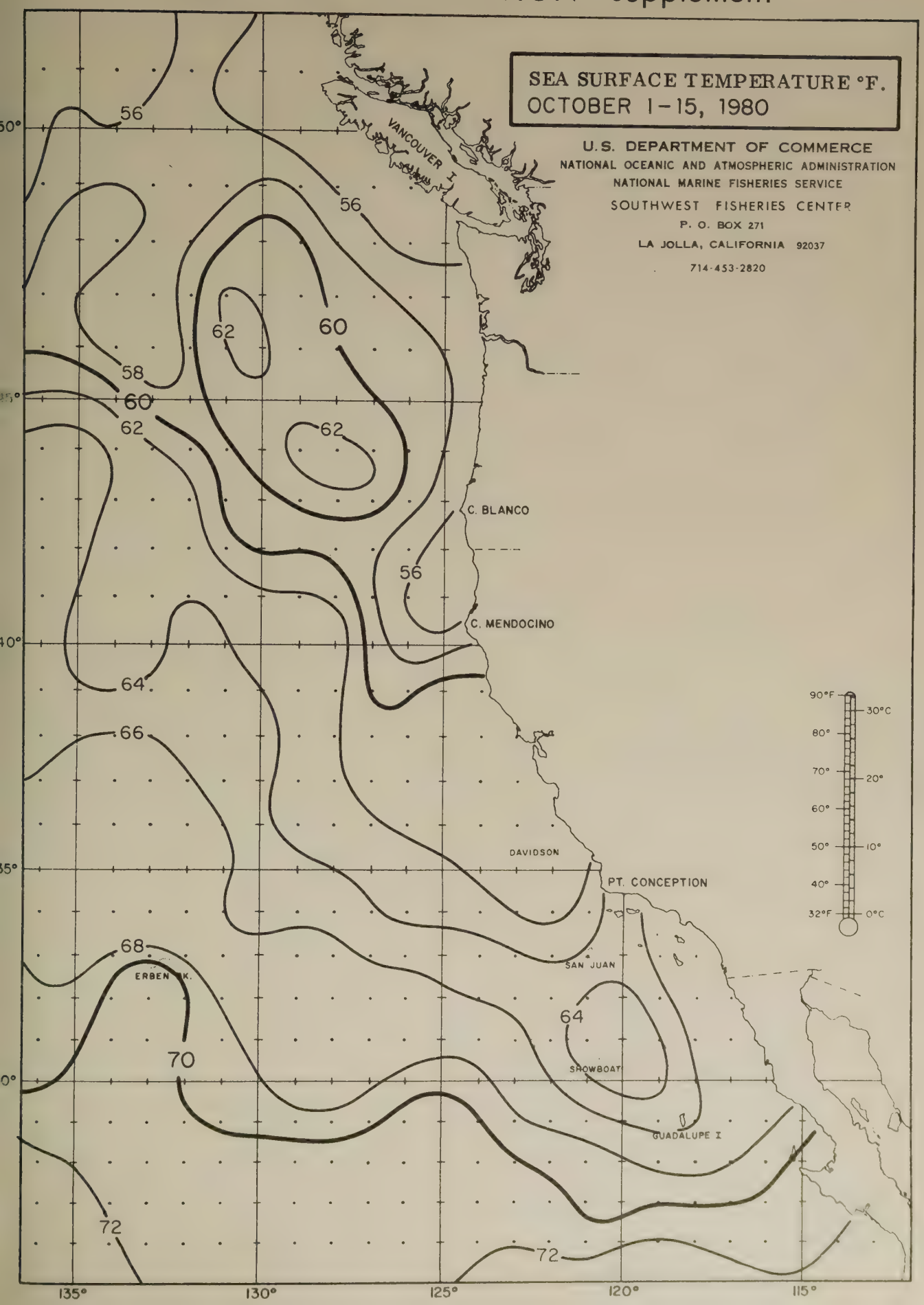


OCTOBER 1-31, 1980

FIG. 9-DEVIATION OF SEA SURFACE TEMP. (°C) FROM 20 YEAR MEAN (1948-1967) SHADED AREAS COLDER IN 1980.

1°C = 1.8°F

FISHING INFORMATION – supplement



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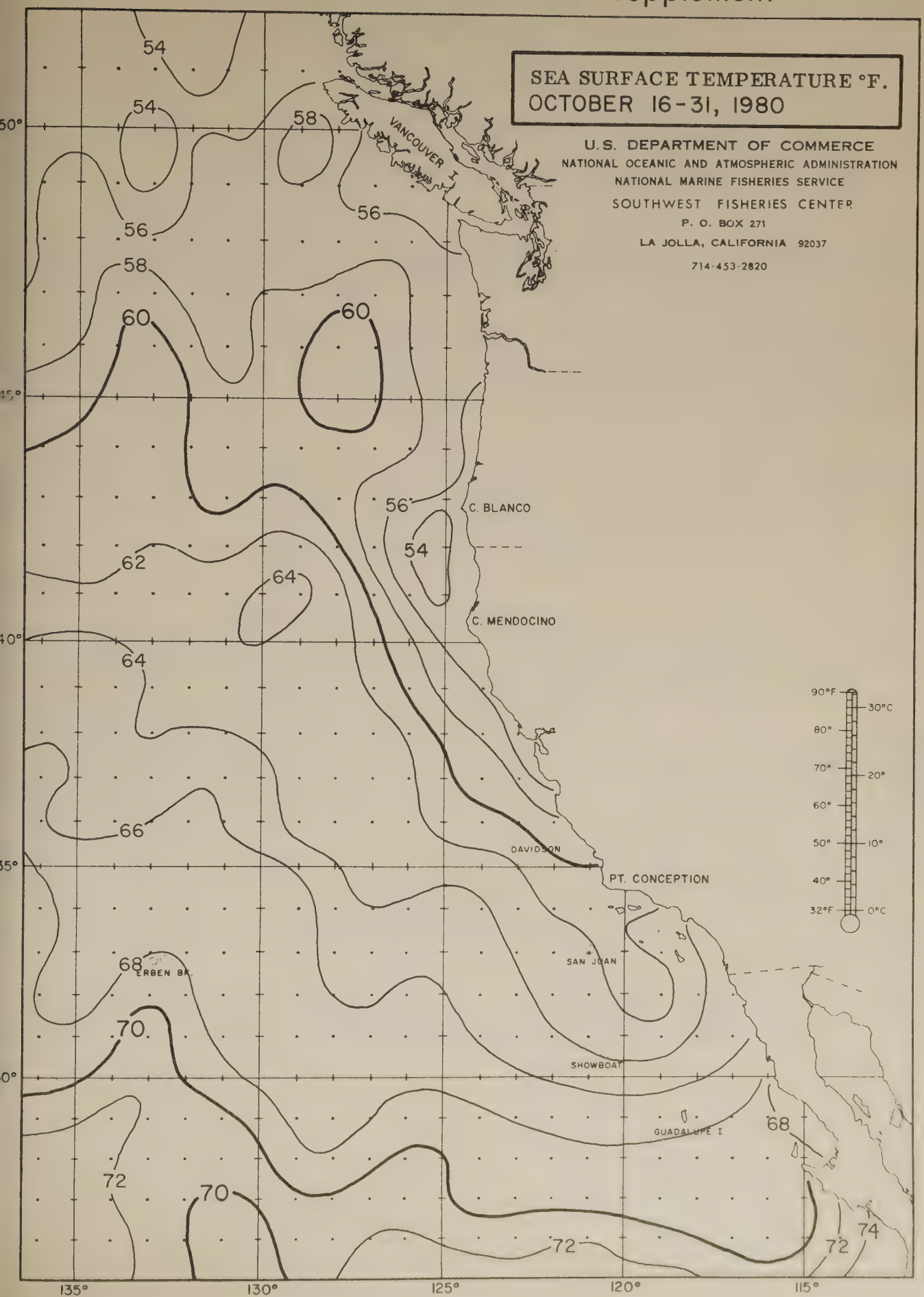

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La Jolla, California 92038

Bulletin No. 80-8

BOATS OFF CENTRAL CALIFORNIA AND PACIFIC NORTHWEST; SEAS ROUGH

Traditionally, the U.S. albacore fishery becomes concentrated in central California waters in late September nd October. The 1980 season is no exception as most of the albacore boats worked this area in late September. ome catches were made between Morro Bay and Fort Bragg and fishing success decreased off Vancouver Island and off- hore Oregon during the last part of September.

A few boats fished off the northern tip of Vancouver Island, but because scores were generally less than 20 ish a day and surface water temperatures were cooling, these boats headed south in the third week of September. ome of them found albacore about 120 miles west of Westport, Washington, where catches were about 10 fish a day n the fourth week of September. These boats were in port at the end of September because of strong winds, but ishermen are planning to scout this area again in October. Albacore caught off Vancouver Island and Westport veraged about 25 pounds (11.4 kg).

Approximately 50-60 vessels were fishing 350-500 miles off the Columbia River in 59-60° F (15.0-15.6° C) waters n mid-September. The mean catches were 30-60 fish a day with top scores of 60-200, but most of the boats left the rea after the third week of September. Some of them returned to port or headed south while 10-15 boats moved arther offshore because a boat returning to Hawaii reported catches of a ton a day for three days 1,000 miles off- hore Oregon. Catches, however, decreased before the 10-15 boats reached the offshore vicinity.

Fishing between Morro Bay and Fort Bragg was 10-120 miles offshore. Large fish of 20-35 pounds (9.1-15.9 kg) redominated in the catches off Morro Bay-Monterey while smaller fish averaging 12-13 pounds (5.5-5.9 kg) were aught in the Point Arena area.

From September 16-18 top jigboat and baitboat catches were 100-200 fish and 5 tons a day, respectively, near he 1908 fathom spot off Morro Bay; however, strong winds forced many boats to port on September 19-20. When winds bated, fishermen found few fish off Morro Bay and many boats headed north to the Monterey vicinity. Fishing was potty during the fourth week of September as jigboat scores were mainly 10-50 fish with occasional 100 fish catches ff the Morro Bay, Point Sur and Santa Cruz areas. Baitboats also worked north to the Monterey area and had catches f up to 5 tons for one day 20-35 miles off Point Sur. Strong winds off central California forced most of the lbacore fleet to return to port during the last few days of September.

Catches off Point Arena were similar to those off Morro Bay during September 16-18. Scores of up to 200 fish nd averages of 50-80 albacore were made 60-120 miles southwest of Point Arena, but rough seas curtailed fishing ctivity in this area. When weather conditions improved in the fourth week of September, boats did not find much ish off Point Arena. Catches of generally less than 10 fish, however, were made off Fort Bragg.

During the last half of September sea surface temperatures (SSTs) remained 1° to 2° F (1.1° to 2.2° C) below ormal over a large part of the coastal region between Cape Blanco and Point Conception where SSTs ranged from 55° F 12.8° C) to the low 60's. Offshore from 60 to 150 miles there were good temperature edges in this coastal region uring most of September. Strong northerly surface winds maintained coastal upwelling and cold water near the oast. Strong wind-mixing and rough seas caused SSTs to remain slightly below normal west of 125° W from 30° N to 5° N also. In this offshore area fishing weather frequently deteriorated due to strong winds and rough seas. ishing weather off central California and southern Oregon was worse than in other coastal fishing areas because of ne persistence of the high pressure ridge that remained over Oregon and northern California most of the time.

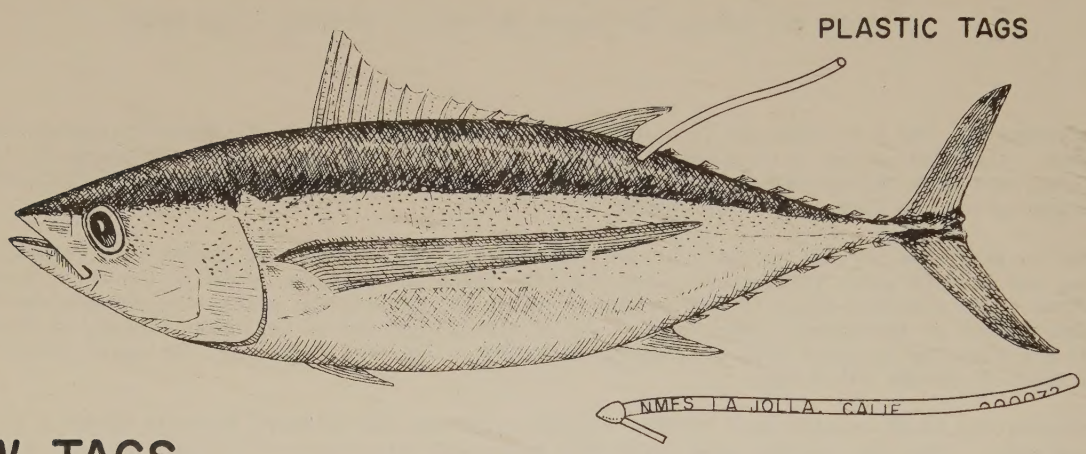
The National Weather Service outlook for the first half of October indicates some weakening and southward move- ent of the high pressure system off the U.S. west coast. A weak low pressure trough will develop off the west coast nd weather fronts will penetrate farther south and more frequently than during September. SSTs are not expected to hange markedly (see chart), but seasonal cooling of the ocean will begin over the fishing grounds.

tober 1, 1980

Staff, Albacore Fisheries Program
R. Michael Laurs, Leader

$ REWARD $

FOR ALBACORE TUNA TAGS



YELLOW TAGS

THE NATIONAL MARINE FISHERIES SERVICE WILL PAY $ 2.00 FOR EACH YELLOW TAG RECOVERED. (NO NEED TO RETURN FISH)

RECORD:

- WHERE
- WHEN
- HOW

} *FISH WAS CAUGHT*

- LENGTH OF FISH (TIP OF LOWER JAW TO FORK OF TAIL)

FORWARD TO NMFS ADDRESS ON TAG

RED TAGS

THE NATIONAL MARINE FISHERIES SERVICE WILL PAY $ 50.00 FOR EACH RED TAG & FISH RETURNED. (FISH WITH TAG INTACT MUST BE RETURNE

RECORD:

- WHERE
- WHEN
- HOW

} *FISH WAS CAUGHT*

- LENGTH OF FISH (TIP OF LOWER JAW TO FORK OF TAIL)

NOTIFY NMFS P.O. BOX 271, LA JOLLA, CA. TEL. (714) 453-2820

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BULLETIN NO. 80-9

MANY ALBACORE JIGBOATS QUIT FISHING FOR 1980 SEASON, BAITBOATS CONTINUE TO OPERATE

Many jigboats quit albacore fishing during the first half of October because of poor catches d rough seas. However, baitboats continued to fish and had fair to good fishing success when ather and sea conditions permitted fishing operations.

Boats worked near the Davidson, Pioneer and Guide Seamounts and 180-200 miles offshore Point ena during the first 2 weeks of October, but rough seas hampered fishing efforts in these ntral California locations. During the first week of October, jigboat scores were mostly 5-30 sh/day with top daily catches of about 50 fish in the seamount areas while baitboats had high tches of 3-5 tons/day in the region 180-200 miles off Point Arena. Jigboat scores in this area re up to 200 fish on October 6. Large albacore weighing 25-30 pounds (11.4-13.6 kg) predomi- ted in the catches made just south of the Davidson Seamount and albacore averaging 20-25 pounds .1-11.4 kg) were caught near the Pioneer and Guide Seamounts and offshore Point Arena. On tober 8, many of the boats off central California returned to port because of rough seas and shermen remained in port until October 10. When boats returned to the fishing grounds on tober 11, catches off San Francisco were 2-4 tons for baitboats and, generally, 20-35 fish for e jigboats. Strong northerly winds forced most of the boats to return to port again on tober 13.

After the winds abated on October 17-18, baitboats returned to the area off San Francisco d resumed making catches of 2-4 tons per day, mostly on large fish. However, the jigboats that cided to return to sea to fish reported only very small, scattered catches and most of them had turned to their home ports or were in transit by October 20.

The anomalous rate of cooling of sea surface temperatures that has occurred for the past veral weeks along much of the U.S. Pacific coast was somewhat retarded during the first half of tober. In fact, a small area off San Francisco was up to 3°F (1.6°C) above normal. Much of e region north of Cape Blanco to Vancouver Island out to 135° W was 1-2°F (0.4-1.1°C) above rmal with a large body of water between 60°-62°F (see temperature chart) centered about 180 to 0 meters off the coasts of Oregon and Washington.

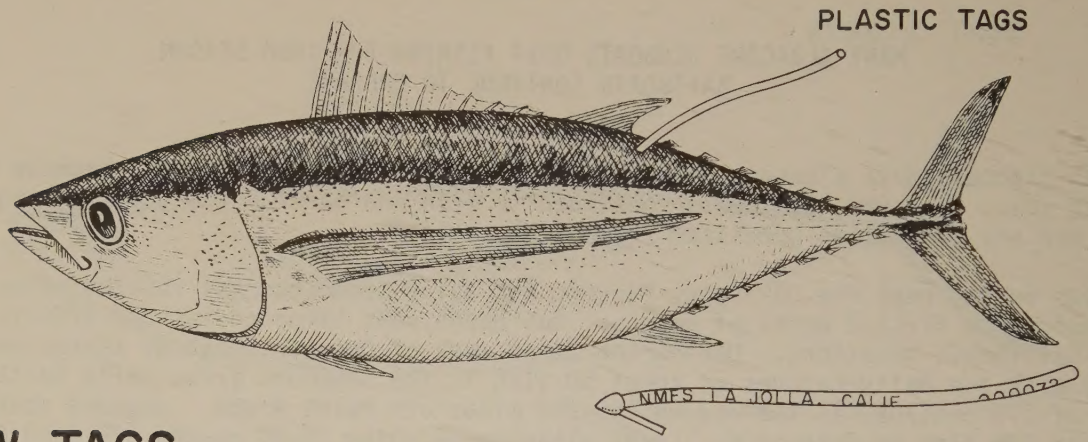
The last NMFS, La Jolla Laboratory's daily albacore fishing broadcast for the 1980 season s made on October 15. The final biweekly albacore fishing bulletin for the 1980 season will issued during the first few days of November.

tober 21, 1980

Staff, Albacore Fisheries Program
R. Michael Laurs, Leader

$ REWARD $

FOR ALBACORE TUNA TAGS



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THE NATIONAL MARINE FISHERIES SERVICE WILL PAY $ 2.00 FOR EACH YELLOW TAG RECOVERED. (NO NEED TO RETURN FISH)

RECORD:

- WHERE
- WHEN
- HOW

} *FISH WAS CAUGHT*

- LENGTH OF FISH (TIP OF LOWER JAW TO FORK OF TAIL)

FORWARD TO NMFS ADDRESS ON TAG

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RECORD:

- WHERE
- WHEN
- HOW

} *FISH WAS CAUGHT*

- LENGTH OF FISH (TIP OF LOWER JAW TO FORK OF TAIL)

NOTIFY NMFS P.O. BOX 271, LA JOLLA, CA. TEL. (714) 453-2820

THE AMERICAN FISHERMEN'S RESEARCH FOUNDATION WILL AWARD CASH PRIZES FOR YELLOW & RED TAG NUMBERS DRAWN IN AN ANNUAL LOTTERY.